



Introduction to the APG 2006-2007

Get a peek at what's ahead...

- Terms and Definitions
- Overview of Verified Credit and Diploma Seals
- Overview of the APG 2005-2006 Edition
- Index of course information



Introduction

The *CTE Administrative Planning Guide* is designed to assist counselors, teachers, and administrators who schedule student enrollment in elective CTE courses. This guide presents information about courses, course descriptions, course sequences, applicable certifications/licenses, and career clusters by program area.

About the Vocabulary

This edition of the *Administrative Planning Guide* uses terms that are defined or explained as follows:

Two Sequential Electives

Students who are pursuing the Standard Diploma or the new Modified Standard Diploma must complete two sequential electives. *Two sequential electives* comprise a concentration of courses from a variety of options, including Career and Technical Education. Completing any CTE concentration or specialization, including prerequisites, if applicable, will meet the requirement.

Concentration and Specialization Sequences

A *concentration* is a coherent sequence of courses completed by a student in a specific career area as identified in this planning guide (Sections 1-8).

A *specialization* is a choice by a student to specialize in an occupational field by taking additional courses in a specific career area as identified in this planning guide (Sections 1-8).

A career and technical education *completer* is a student who has met the requirements for a career and technical concentration or specialization and all requirements for high school graduation or an approved alternative education program.

Student-Selected Verified Credit

A *standard credit* is based on a minimum of 140 clock hours of instruction and successful completion of the requirements of the course.

A *verified credit* is based on a standard credit plus a passing score on the end-of-course SOL test (or other test as described in the Standards of Accreditation 8 VAC 20-131-110). A standard credit may not be verified more than once.

A *student-selected verified credit* is a credit for a course that includes a test approved by the Virginia Board of Education. (According to SOA 8 VAC 20-131-110.B, footnote 5: A student may utilize additional tests for earning verified credit in computer science, technology, or other areas as prescribed by the Board in 8 VAC 20-131-110.B.)

In November 2005, the Board of Education approved selected industry certification, state licenses, and occupational competency assessments from the National Occupational Competency Testing Institute (NOCTI) for use in awarding student-selected verified credit in approved career and technical education courses or course sequences. These student-selected verified credits are valid for the remainder of the 2005-2006 school year and until the Board approves any revisions during the 2006-2007 school year.

Career Clusters

To help students investigate careers and design their courses of study to advance their career goals, the Office of Career and Technical Education Services in Virginia has adopted the nationally accepted structure of career clusters, career pathways, and sample career specialties or occupations.

To simplify federal reporting, *The Career and Technical Education Reporting System (CTERS) User's Manual* assigns a career cluster to each course. The cluster assignment for each course is also identified in the program area sections (Sections 1-8).

Additional information and samples of CTE course selection using career families are included in Section 11: Instructional Planning with Career Clusters, Career Pathways, and Occupations.

Criteria for Earning Student-Selected Verified Credit

Student-selected verified credit will be awarded for certification or licensure examinations that meet all of the following criteria:

- Industry certification or licensure examinations that are approved to satisfy the requirements for the Board of Education's Career and Technical Education Seal and the Board of Education's Seal of Advanced Mathematics and Technology will satisfy requirements for student-selected verified credits.
- Occupational competency assessments from the National Occupational Competency Testing Institute (NOCTI) are approved for verified credit only.
- For students to be eligible to receive student-selected verified credits, their teacher must be certified by the issuing organization relative to the industry certification or licensure. In the case of a CTE program area where there are potential multiple certifications, the teacher must be certified in at least one industry certification that is related to the course and/or course sequence. **Exception:** No teacher certification requirement exists for the award of verified credits to students passing a selected NOCTI assessment related to their CTE program.
- A standard credit may not be verified more than once.

One student-selected verified credit will be awarded for passing each certification or licensure examination or occupational competency assessment that meets all of the above criteria if the student earns one standard unit of credit only in the career and technical education concentration or specialization.

Two student-selected verified credits will be awarded for passing each certification or licensure examination or occupational competency assessment that meets all of the above criteria if the student

- meets the CTE concentration or specialization course requirements for program completer, and
- earns at least two standard units of credit in the CTE concentration or specialization.

Diploma Seals

In September 2000, the Board of Education approved criteria for selecting and approving certifications and licenses to satisfy the requirements for the Career and Technical Education Seal and the Advanced Mathematics and Technology Seal.

The examination must be in a CTE field that confers a certification from a recognized industry, trade, or professional association. For the technology requirements of the Board's Seal of Advanced Mathematics and Technology, students may elect to pass a Board-approved exam that confers college-level credit in a technology or computer science area.

- The examination must be standardized and graded independently of the school or school division in which the student is enrolled.
- The examination must be knowledge-based.
- The examination must be administered on a multistate or international basis.
- The course of study for which the student receives a certification must be designed to prepare the student for an occupation or occupational area or for the college-level credit in an occupation or occupational area that is technology-driven.

To earn a *Career and Technical Education Seal*, a student must

- fulfill the requirements for either a standard or advanced studies diploma, and
- complete a prescribed sequence of courses in a CTE concentration or specialization, and
- maintain a B or better average in CTE courses, or
- pass an exam that confers certification from a recognized industry, trade, or professional association or
- acquire a professional license in a career and technical field.

To earn an *Advanced Mathematics and Technology Seal*, a student must

- fulfill the requirements for either a standard or advanced studies diploma, and
- satisfy all mathematics requirements for the Advanced Studies Diploma with a B average or better, and
- pass an exam that confers certification from a recognized industry, trade, or professional association, or
- pass an exam approved by the Board that confers college-level credit in a technology or computer science area.

About the APG

This 2006-2007 edition of the *Administrative Planning Guide* is divided into the following sections:

Introduction defines terms of interest related to graduation requirements. It also contains a helpful index that locates each course description, course sequence, and certification description.

Each of the following program area sections provides course titles and descriptions; outlines completer sequences; identifies applicable certifications, licenses, and assessments; and names the career family in which the students in the course should be reported:

- **Section 1, Agricultural Education:** Courses that focus on agriculture and natural resources
- **Section 2, Business and Information Technology:** Courses that focus on information systems, finance, management, office administration
- **Section 3, Family and Consumer Sciences:** Courses that focus on early childhood education, consumer services, interior design, fashion design, foods/nutrition, hospitality, family and human services, home management
- **Section 4, Health and Medical Sciences:** Courses that focus on nursing, EMT, dental, surgical technician, physical and occupational therapy, veterinary aide
- **Section 5, Marketing:** Courses that focus on the buying, transporting, storing of goods; promotion of goods and services; market research; marketing management
- **Section 6, Technology Education:** Courses that focus on design, technology, engineering

- **Section 7, Trade and Industrial Education:** Courses that focus on communications, construction, metalworking, personal and public services, transportation
- **Section 8, Career Connections:** Courses that focus on career exploration, entrepreneurship, leadership, Education for Employment, Teacher Cadet

Section 9, Verified Credits, Diploma Seals, and Board-Approved Credentials explains the relationships among Board-approved credentials (examinations for industry certifications, licenses, and nationwide assessments) and graduation requirements (verified credits and diploma seals — CTE seal and Advanced Mathematics and Technology seal).

Section 10, Descriptions of Certifications, Licenses, and Assessments presents each credential, how to earn it, its provider, and a list of courses that may help students prepare for the applicable examination.

Section 11, Instructional Planning with Career Clusters, Career Pathways, and Occupations explains the nationally accepted concept of career clusters and how this organizational system helps with career exploration and student course selection.

Section 12, Career Exploration and Middle School presents topics for middle school career exploration and the courses that support them.

Section 13, Career Awareness presents courses that expose elementary school students to career skills.

Section 14, Comments and Questions contains contact information for the Virginia Department of Education, Office of Career and Technical Education Services.

Index

The index locates by page number the specific information related to each course. It begins on the next page.

Agricultural Education

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Middle School Courses				
Introduction to Agriscience Grade 6 8002	12-1			
Agriscience Exploration Grade 7 8003	12-1			
Agriscience and Technology Grade 8 8004	12-2			
Fundamental Courses				
Agricultural Mechanics and Basic Plant Science 8006	1-2			
Agricultural Mechanics and Basic Animal Science 8008	1-3			
Agricultural Business				
Agricultural Business Fundamentals 8022	1-3	1-3		
Agricultural Business Operations 8024	1-3	1-3		
Agricultural Business Management 8026	1-3	1-3		
Agricultural Power				
Introduction to Power, Structure, and Technical Systems 8016	1-4	1-5	Outdoor Power Equipment Certifications (EETC)	10-33
			Agriculture Mechanics Assessment (NOCTI)	10-3
Agricultural Structural Systems 8017	1-4	1-5		
Agricultural Power Systems 8018	1-4	1-5	Agriculture Mechanics Assessment (NOCTI)	10-3
Agricultural Fabrication and Emerging Technologies 8019	1-4	1-5		
Advanced Agricultural Power Systems 8020	1-4	1-5		
Agricultural Production				
Agricultural Production Technology 8010	1-5	1-6	Commercial Pesticide Applicator Certification Examination (VA Department of Agriculture and Consumer Services)	10-13
			Production Agriculture Assessment (NOCTI)	10-35
Agricultural Production Management 8012	1-5	1-6	Commercial Pesticide Applicator Certification Examination (VA Department of Agriculture and Consumer Services)	10-13
			Production Agriculture Assessment (NOCTI)	10-35
Operating the Farm Business 8014	1-5	1-6		
Natural Resources Management				
Introduction to Natural Resources 8040	1-6	1-7	Forestry Products & Processing Assessment (NOCTI)	10-20
			Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13
Forestry, Wildlife, and Soil Management 8042	1-6	1-7	Forestry Products & Processing Assessment (NOCTI)	10-20
			Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13
Natural Resources Business Management 8044	1-6	1-7	Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Horticulture				
Horticulture Sciences 8034	1-7	1-9	Greenhouse Operators Certification Program (Southern Greenhouse Growers Association/Virginia Flower Growers Association)	10-22
			Floriculture-Greenhouse Assessment (NOCTI)	10-19
			Horticulture-Floriculture Assessment (NOCTI)	10-23
			Horticulture-Landscaping Assessment (NOCTI)	10-23
			Horticulture-Olericulture Assessment (NOCTI)	10-23
			Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13
Floral Design I 8055	1-7	1-9	Greenhouse Operators Certification Program (SGGA/VFGA)	10-22
Floral Design II 8056	1-7	1-9	Greenhouse Operators Certification Program (SGGA/VFGA)	10-22
Floriculture 8038	1-8	1-9	Greenhouse Operators Certification Program (SGGA/VFGA)	10-22
			Horticulture-Floriculture Assessment (NOCTI)	10-23
			Floriculture-Greenhouse Assessment (NOCTI)	10-19
			Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13
Greenhouse Plant Production and Management 8035	1-8	1-9	Greenhouse Operators Certification Program (SGGA/VFGA)	10-22
			Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13
			Horticulture-Olericulture Assessment (NOCTI)	10-23
Landscaping 8036	1-8	1-9	Horticulture-Landscaping Assessment (NOCTI)	10-23
			Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13
Specialty Horticulture Arts 8037	1-8	1-9	Greenhouse Operators Certification Program (SGGA/VFGA)	10-22
Biotechnology Program				
Biotechnology Foundations 8085	1-9	1-10		
Biotechnology Applications in Agriculture 8087	1-10	1-10		
Specialized Courses				
Applied Agricultural Concepts 8072/8073	1-10	1-10		
Biological Applications in Agriculture 8086	1-11	1-11		
Ecology/Environmental Management 8045/8046	1-11	1-11		
Equine Management and Production 8015/8080	1-12	1-12		
Small Animal Care I 8083	1-12	1-12		
Small Animal Care II 8084	1-12	1-12		
Veterinary Science 8088	1-12	1-12		
Small Engine Repair 8021/8082	1-13	1-13	Outdoor Power Equipment Certification (EETC)	10-33
			Air-Cooled Gas Engine Assessment (NOCTI)	10-4

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Turf Establishment and Maintenance 8051	1-13	1-13	Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13
Advanced Turf Grass Applications 8054	1-13	1-13	Commercial Pesticide Applicator Certification Examination (VA Dept. of Agriculture and Consumer Services)	10-13
Farm Equipment Operator 8052	1-14	1-14		
Introduction to Leadership 9091	1-14	1-14		
Leadership Development	1-14	1-14		
Special Courses				
Agricultural Education for the Disadvantaged 8050	1-14			
Agricultural Education for the Disabled 8053	1-14			
General Mechanics for the Disadvantaged 8070	1-14			
Agricultural Education Dual Enrollment — Postsecondary 8095	1-14			

Business and Information Technology

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Middle School/Foundation Courses				
Keyboarding (Middle School) 6150	12-1			
Computer Solutions 6609/6610	12-1			
Make It Your Business 6110/6111	12-2			
Occupational Courses				
Note: For Business and Information Technology occupational courses, certifications are marked as follows: *Certification is considered an entry-level certification. ** Certification is considered a mid-level certification and may require significant curriculum “mapping.” *** Certification is considered an advanced-level certification and will need to be “mapped” to curriculum at the academy level.				
Accounting 6320	2-3	2-3	Accounting— Basic Assessment (NOCTI)	10-2
			Accounting— Complete Assessment (NOCTI)	10-2
			Certification for Legal Professionals* (ALS) when combined with Office Administration and Legal Systems Administration	10-9
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
Advanced Accounting 6321	2-3	2-3	Accounting— Basic Assessment (NOCTI)	10-2
			Accounting— Complete Assessment (NOCTI)	10-2
			Certification for Legal Professionals* (ALS) when combined with Office Administration and Legal Systems Administration	10-9
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
Business Law 6131	2-4	2-4	IC ³ Certification* (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
Business Law 6132	2-4	2-4		
Business Management 6135	2-5	2-5	IC ³ Certification* (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
Business Management 6136	2-5	2-5		
Computer Applications 6611	2-6, 12-2	2-6	Administrative Assisting Assessment (NOCTI)	10-2
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
			MOS* (Microsoft Office Specialist) (Microsoft) (pass any one unique exam at core level)	10-30
Computer Applications 6617	2-6, 12-2	2-6		
Computer Information Systems 6612	2-7	2-7	Administrative Assisting Assessment (NOCTI)	10-2
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
			MOS* (Microsoft Office Specialist) (Microsoft)	10-30

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Computer Information Systems 6614	2-7	2-7		
Advanced Computer Information Systems 6613	2-7	2-7	Administrative Assisting Assessment (NOCTI)	10-2
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
			MOS* (Microsoft Office Specialist) (Microsoft)	10-30
Advanced Computer Information Systems 6615	2-7	2-7		
Computer Network Software Operations 6650	2-9	2-9	A+* (CompTIA)	10-1
			A+ Certification: Operating Systems Technologies Examination*	10-1
			A+ Certification: Core Hardware Examination*	10-2
			Brainbench Network Administration Certifications*	10-6
			Brainbench Systems Administration Certifications*	10-6
			Brainbench Technical Support Certifications*	10-6
			Certified Novell Administrator* (Novell)	10-11
			CIW Associate* (Prosoft Learning)	10-10
			CIW Associate Certification: Internet Business Foundations Examination*	10-10
			CIW Associate Certification: Site Development Foundations Examination*	10-10
			CIW Associate Certification: Network Technology Foundations Examination*	10-11
			CIW Professional* (Prosoft Learning)	10-11
			Customer Support Specialist Certification* (Help Desk Institute)	10-16
			Fundamentals of Wireless LANs Certificate* (Cisco Systems)	10-21
			IC ³ * (Certiport)	10-24
			iNet* (CompTIA)	10-25
			International Computer Driving License* (ICDL US)	10-25
			IT Essentials Certificate, Level 1* (Cisco Systems)	10-26
			IT Essentials Certificate, Level 2* (Cisco Systems)	10-26
			Linux +* (CompTIA)	10-27
			Microsoft Certified Professional (MCP)* (Microsoft)	10-29
			MOS* (Microsoft)	10-30
			Unix Certificate* (Cisco Systems)	10-37
			Voice and Data Cabling Certificate* (Cisco Systems)	10-38

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Advanced Computer Network Software Operations 6651	2-9	2-9	A+* (CompTIA)	10-1
			A+ Certification: Operating Systems Technologies Examination*	10-1
			A+ Certification: Core Hardware Examination*	10-2
			Brainbench Network Administration Certifications*	10-6
			Brainbench Systems Administration Certifications*	10-6
			Brainbench Technical Support Certifications*	10-6
			Certified Novell Administrator* (Novell)	10-11
			CIW Associate* (Prosoft Learning)	10-10
			CIW Associate Certification: Internet Business Foundations Examination*	10-10
			CIW Associate Certification: Site Development Foundations Examination*	10-10
			CIW Associate Certification: Network Technology Foundations Examination*	10-11
			CIW Professional* (Prosoft Learning)	10-11
			Customer Support Specialist Certification* (Help Desk Institute)	10-16
			Fundamentals of Wireless LANs Certificate*	10-21
			IC ³ * (Certiport)	10-24
			iNet* (CompTIA)	10-25
			International Computer Driving License* (ICDL US)	10-25
			IT Essentials Certificate, Level 1* (Cisco Systems)	10-26
			IT Essentials Certificate, Level 2* (Cisco Systems)	10-26
			Linux +* (CompTIA)	10-27
			Microsoft Certified Professional (MCP)* (Microsoft)	10-29
			MOS* (Microsoft)	10-30
			Network+* (CompTIA)	10-32
			Unix Certificate* (Cisco Systems)	10-37
			Voice and Data Cabling Certificate* (Cisco Systems)	10-38
Computer Solutions (middle school) 6609, 6610	12-1			
Database Design and Management (Oracle) 6660	2-11	2-11	IC ³ * (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
			MOS* (Microsoft)	10-30
			Oracle Certified Professional (Oracle)	10-33

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Advanced Database Design and Management (Oracle) 6661	2-11	2-11	Brainbench Software Development Certifications*	10-6
			Brainbench Web Administration Certifications	10-6
			IC ³ * (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
			Java Programming Certificate* (Cisco Systems)	10-26
			MOS* (Microsoft)	10-30
			Oracle Certified Professional (Any Oracle Professional Certification Exam*) (Oracle)	10-33
Design, Multimedia, and Web Technologies 6630	2-12	2-12	Sun Certified Programmer for Java2 Platform (Sun Microsystems)	10-37
			Adobe Certified Expert* (Adobe)	10-3
			Brainbench Software Development Certifications*	10-6
			Brainbench Web Administration Certification	10-7
			Brainbench Web Design and Development Certifications*	10-6
			Brainbench Desktop Publishing Software Certifications	10-7
			CIW Associate* (Prosoft Learning)	10-10
			CIW Associate Certification: Internet Business Foundations Examination (Prosoft Learning)	10-10
			CIW Associate Certification: Site Development Foundations Examination*	10-10
			CIW Associate Certification: Network Technology Foundations Examination*	10-11
			CIW Professional* (Prosoft Learning)	10-11
			IC ³ * (Certiport)	10-24
			iNet* (CompTIA)	10-25
			International Computer Driving License* (ICDL US)	10-25
			Macromedia Certified Professional* (Macromedia)	10-27
			Master CIW Designer*** (Prosoft Learning)	10-28
			MOS* (Microsoft) (pass any one unique exam at the core level)	10-30
			Web Design Certificate* (Cisco Systems)	10-38
			WOW Certified Apprentice Webmaster* (World Organization of Webmasters)	10-38
			WOW Certified Web Administrator	10-39
			WOW Certified Web Designer Apprentice*	10-39
			WOW Certified Web Developer Apprentice*	10-39

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Advanced Design, Multimedia, and Web Technologies 6631	2-12	2-12	Adobe Certified Expert* (Adobe)	10-3
			Brainbench Software Development Certifications*	10-6
			Brainbench Web Administration Certification	10-7
			Brainbench Web Design and Development Certifications*	10-6
			Brainbench Desktop Publishing Software Certifications	10-7
			CIW Associate* (Prosoft Learning)	10-10
			CIW Associate Certification: Internet Business Foundations Examination (Prosoft Learning)	10-10
			CIW Associate Certification: Site Development Foundations Examination*	10-10
			CIW Associate Certification: Network Technology Foundations Examination*	10-11
			CIW Professional* (Prosoft Learning)	10-11
			IC ³ * (Certiport)	10-24
			iNet* (CompTIA)	10-25
			International Computer Driving License* (ICDL US)	10-25
			Macromedia Certified Professional* (Macromedia)	10-27
			Master CIW Designer*** (Prosoft Learning)	10-28
			MOS* (Microsoft) (pass any one unique exam at the core level)	10-30
			Web Design Certificate* (Cisco Systems)	10-38
			WOW Certified Apprentice Webmaster* (World Organization of Webmasters)	10-38
			WOW Certified Web Administrator*	10-39
			WOW Certified Web Designer Apprentice*	10-39
			WOW Certified Web Developer Apprentice*	10-39
Digital Input Technologies 6160	2-14, 12-2	2-14		
Digital Input Technologies 6161	2-14, 12-2	2-14	MOS* (Microsoft) (pass any two unique MOS exams at the core level)	10-30
Finance 6120	2-15	2-15	IC ³ * (Certiport)	10-24
			International Computer Driving License* (ICDL US)	10-25
Finance 6121	2-15	2-15		
Information Technology Fundamentals 6670	2-16	2-16	IC ³ * (Certiport)	10-24
			International Computer Driving License (ICDL US)*	10-25
			IT Essentials Certificate, Level 1* (Cisco Systems)	10-26
			MOS* (Microsoft)	10-30
Keyboarding (Middle school) 6150	12-1			
Keyboarding (Secondary) 6151	2-17, 12-3	2-17		
Keyboarding Applications 6152	2-17, 12-3	2-17	MOS* (Microsoft)	10-30
Keyboarding Applications 6153	2-17, 12-3	2-17		

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Legal Systems Administration 6735	2-18	2-18	Administrative Assisting Assessment	10-2
			Certification for Legal Professionals* (ALS) when combined with Office Administration and Accounting	10-9
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License (ICDL US)*	10-25
			MOS* (Microsoft) (pass any two unique MOS exams at the core level)	10-30
Legal Systems Administration 6736	2-18	2-18		
Make It Your Business (middle school) 6110, 6111	12-2			
Medical Systems Administration 6730	2-19	2-19	Administrative Assisting Assessment (NOCTI)	10-2
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License (ICDL US)*	10-25
			MOS* (Microsoft) (pass any two unique MOS exams at the core level)	10-30
Medical Systems Administration 6731	2-19	2-19		
Notetaking 6241/6242	2-20	2-20		
Office Administration 6621	2-20	2-20	Administrative Assisting Assessment (NOCTI)	10-2
			Certification for Legal Professionals* (ALS) when combined with Legal Systems Administration and Accounting	10-9
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License (ICDL US)*	10-25
			MOS* (Microsoft) (pass any two unique MOS exams at the core level)	10-30
Office Administration 6622	2-20	2-20		
Principles of Business and Marketing 6115	2-21, 12-3	2-21	IC ³ Certification* (Certiport)	10-24
			International Computer Driving License (ICDL US)*	10-25
Principles of Business and Marketing 6116	2-21, 12-3	2-21		
Programming 6640	2-22	2-22	Brainbench Software Development Certification (Brainbench)	10-6
			CIW Associate* (Prosoft Learning)	10-10
			CIW Associate Certification: Internet Business Foundations Examination*	10-10
			CIW Associate Certification: Site Development Foundations Examination*	10-10
			CIW Associate Certification: Network Technology Foundations Examination	10-11
			CIW Professional* (Prosoft Learning)	10-11
			IC ³ (Certiport)	10-24
			International Computer Driving License (ICDL US)	10-25
			Microsoft Certified Professional* (Microsoft)	10-30

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Advanced Programming 6641	2-22	2-22	Brainbench Software Development Certification (Brainbench)	10-6
			CIW Associate* (Prosoft Learning)	10-10
			CIW Associate Certification: Internet Business Foundations Examination*	10-10
			CIW Associate Certification: Site Development Foundations Examination*	10-10
			CIW Associate Certification: Network Technology Foundations Examination	10-11
			CIW Professional* (Prosoft Learning)	10-11
			IC ³ (Certiport)	10-24
			International Computer Driving License (ICDL US)	10-25
			Java Programming Certificate (Cisco Systems)	10-26
			Microsoft Certified Professional* (Microsoft)	10-30
			Sun Certified Programmer for Java2 Platform* (Sun Microsystems)	10-37
Word Processing 6625	2-23	2-23	Administrative Assisting Assessment (NOCTI)	10-2
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License (ICDL US)*	10-25
			MOS* (Microsoft) (pass any two unique MOS exams at the core level)	10-30
Word Processing 6626	2-23	2-23		
Special Programs				
Office Specialist I 6740 Office Specialist II 6741 Office Specialist III 6742	2-24	2-24	Administrative Assisting Assessment (NOCTI)	10-2
			IC ³ Certification* (Certiport)	10-24
			International Computer Driving License (ICDL US)*	10-25
			MOS* (Microsoft) (pass any two unique MOS exams at the core level)	10-30
Business Individualized Program 6745	2-25			
Business and Information Technology Dual Enrollment 6810	2-25			
International Baccalaureate Business Management IB6135	2-25	2-25		
International Baccalaureate Information Technology in a Global Society IB6613	2-25	2-25	IC ³ Certification* (Certiport)	10-24
			International Computer Driving License (ICDL US)*	10-25
			MOS* (Microsoft) (pass any two unique MOS exams at the core level)	10-30

Family and Consumer Sciences

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Middle School Courses				
Exploring Work and Family Roles 8204/8206/8208/8241/8242/8243/8244/8245	3-2, 12-4			
GRADS 8211/8212	3-2, 12-4			
ProTeam 9060/9061	3-3, 12-6			
Work Focus Courses: Secondary				
Culinary Arts I 8275 Culinary Arts II 8276	3-2	3-3	ACCESS (American Culinary Foundation)	10-2
	3-3		Commercial Foods Assessment (NOCTI)	10-14
			Food Production Management and Services Assessment (NOCTI)	10-20
			ProStart National Certificate of Achievement (Educational Foundation of the National Restaurant Association)	10-35
			Retail Commercial Baking ((NOCTI)	10-36
Culinary Arts 8521/8522/8523	3-3	3-4	ACCESS (American Culinary Foundation)	10-2
			Commercial Foods Assessment (NOCTI)	10-14
			Food Production Management and Services Assessment (NOCTI)	10-20
			ProStart National Certificate of Achievement (Educational Foundation of the National Restaurant Association)	10-35
			Retail Commercial Baking (NOCTI)	10-36
Early Childhood Education I 8285 Early Childhood Education II 8286	3-4	3-4	Early Childhood Care and Education Assessment (NOCTI)	10-17
Family and Human Services I 8264 Family and Human Services II 8265	3-5	3-5		
Fashion Design I 8280 Fashion Design II 8281	3-5	3-6		
	3-6			
Hospitality Services I 8202	3-6	3-7	Hospitality Management—Food and Beverage Option Assessment (NOCTI)	10-23
			Hospitality Management—Lodging Option Assessment (NOCTI)	10-23
			Lodging Management Level 1 (AH&LA)	10-27
			START Certification (AH&LA)	10-36
Hospitality Services II 8203	3-6	3-7	Hospitality Management—Food and Beverage Option Assessment (NOCTI)	10-23
			Hospitality Management—Lodging Option Assessment (NOCTI)	10-23
			Lodging Management Level 2 (AH&LA)	10-27
			START Certification (AH&LA)	10-36
Interior Design I 8295 Interior Design II 8296	3-7	3-8		

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Other Work Focus Courses				
Career Pathways (Career Exploration) Phase 1 9070 Career Pathways (Career Skills) Phase 2 9071 Career Pathways (Career Match) Phase 3 9072	3-8			
Exploring Entrepreneurship 9093	3-9	3-9		
Entrepreneurship Education 9094	3-9	3-9		
Family and Consumer Sciences Dual Enrollment—Postsecondary 8266	3-9			
GRADS Work Focus/Occupational Experience 8213	3-9			
Introduction to Leadership 9091	3-9	3-10		
Leadership Development 9092	3-10	3-10		
Teacher Cadet 9062	3-10	3-10		
Transition Focus Courses: Secondary				
Introduction to Culinary Arts 8249/8250	3-11	3-11		
Introduction to Early Childhood Education 8233/8234	3-11	3-12		
Introduction to Family and Human Services 8237/8238	3-12	3-12		
Introduction to Fashion Design and Marketing 8247/8248	3-13	3-13		
Introduction to Hospitality, Tourism, and Recreation 8258/8259	3-13	3-14		
Introduction to Housing, Home Furnishings, and Design 8254/8255	3-14	3-14		
Work and Family Management 8205/8282	3-15	3-15		
Family Focus Courses: Secondary				
Family Relations 8223/8225	3-16	3-16		
Individual Development 8209/8210	3-16	3-17		
Life Planning FCS8226/8227	3-17	3-18		
Nutrition and Wellness 8228/8229	3-19	3-19		
Parenting 8231/8232	3-19	3-20		
Resource Management 8214/8219	3-20	3-21		
Other Family Focus Courses				
GRADS Family Focus 8277/8278	3-21			

Health and Medical Sciences

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Middle School Course				
Health and Medical Sciences Exploratory 8370	4-2, 12-4			
Introductory Course				
Introduction to Health and Medical Sciences Occupations 8302	4-2	4-3		
Biomedical Foundations				
Biotechnology Foundations 8344 Biomedical Technician 8347	4-3	4-3		
Dental Assistant				
Dental Assistant I 8328	4-3	4-4		
Dental Assistant II 8329	4-4	4-4	Certified Dental Assistant: Infection Control Examination (Dental Assisting National Board)	10-9
			Certified Dental Assistant: Radiation Health & Safety Examination (Dental Assisting National Board)	10-9
			Dental Assisting Assessment (NOCTI)	10-16
			NRDA Certification (National Allied Health Registry/National Association for Health Professionals)	10-32
Emergency Medical Terminology				
Emergency Medical Technician Basic-I 8333	4-4	4-5		
Emergency Medical Technician Basic-II 8334	4-5	4-5	Emergency Medical Technician (Virginia Department of Health)	10-18
Emergency Medical Technician Basic-III 8335	4-5	4-5		
Health Careers Cluster				
Health Assistant I 8331	4-5	4-6		
Health Assistant II 8332	4-5	4-6	Nurse Aide (Virginia Board of Nursing)	10-33
			Health Assisting Assessment (NOCTI)	10-22
			Home Health Aide Assessment (NOCTI)	10-22
			Nursing Assistant Assessment (NOCTI)	10-33
			National Health Care Foundation Skills Standards Assessment (National Consortium on Health Science and Technology Education/NOCTI)	10-31
Medical Assistant				
Medical Assistant I 8345	4-6	4-6		
Medical Assistant II 8346	4-6	4-6	Medical Assisting Assessment (NOCTI)	10-29
			NRDA Certification (National Allied Health Registry/National Association for Health Professionals)	10-32
Medical Terminology				
Medical Terminology 8383	4-7	4-7		

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Nursing Assistant				
Nurse Aide I 8360	4-7	4-8		
Nurse Aide II 8362	4-7	4-8	Health Assisting Assessment (NOCTI)	10-22
			Home Health Aide Assessment (NOCTI)	10-22
			Nursing Assisting Assessment ((NOCTI)	10-33
			Nurse Aide (Virginia Board of Nursing)	10-33
			National Health Care Foundation Skills Standards Assessment (National Consortium on Health Science and Technology Education/NOCTI)	10-31
Pharmacy Technician				
Pharmacy Technician I 8305	4-8	4-8	VA Pharmacy Technician Examination (VA Board of Pharmacy)	10-37
Pharmacy Technician II 8306	4-8	4-8	VA Pharmacy Technician Examination (VA Board of Pharmacy)	10-37
Physical Therapy				
Physical Therapy /Occupational Therapy 8385	4-8	4-9		
Practical Nursing				
Practical Nursing I 8357	4-9	4-9		
Practical Nursing II 8358	4-9	4-9	Health Assisting Assessment (NOCTI)	10-22
			Home Health Aide Assessment (NOCTI)	10-22
			Nursing Assisting Assessment ((NOCTI)	10-33
			Nurse Aide (Virginia Board of Nursing)	10-33
			National Health Care Foundation Skills Standards Assessment (National Consortium on Health Science and Technology Education/NOCTI)	10-31
Practical Nursing III 8359	4-9	4-9		
Surgical Technology				
Surgical Technologist I 8351	4-10	4-10		
Surgical Technologist II 8352	4-10	4-10		
Veterinary Assistant				
Veterinary Assistant I 8310	4-10	4-11		
Veterinary Assistant II 8311	4-10	4-11		
Veterinary Assistant III 8312	4-10	4-11		
Occupational Mix (with Family and Consumer Sciences)				
Home Health Aide 8364	4-11	4-11		
Special Programs				
Dual Enrollment with Postsecondary 8394	4-11			

Marketing

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
General Marketing				
Fundamentals of Marketing 8110	5-3	5-3		
Internet Marketing 8125	5-3	5-3	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Introduction to Marketing 8111	5-3	5-4		
Make It Your Business 8109/8112/ 8113/8114	5-4, 12-5	5-4		
Marketing 8120/8121	5-4	5-5	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Advanced Marketing 8130/8131	5-5	5-5	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Advanced Concepts of Business and Marketing Certificate (ASK Institute)	10-3
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
			Retail Trades Assessment (NOCTI)	10-36
Principles of Business and Marketing 8115/8116	5-5	5-5		
Executive Marketing				
Global Marketing and Commerce 8135	5-6	5-6	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Advanced Global Marketing and Commerce 8136	5-6	5-6	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Advanced Concepts of Business and Marketing Certificate (ASK Institute)	10-3
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
			Retail Trades Assessment (NOCTI)	10-36
Marketing Management 8132	5-7	5-7	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Advanced Concepts of Business and Marketing Certificate (ASK Institute)	10-3
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Exploring Entrepreneurship 9093	5-7	5-7		
Entrepreneurship Education 9094	5-7	5-7		
Apparel and Accessories Marketing				
Introduction to Fashion Design and Marketing 8148/8149	5-8	5-9		
Fashion Marketing 8140/8141	5-8	5-9	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Advanced Fashion Marketing 8145/8146	5-8	5-9	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Advanced Concepts of Business and Marketing Certificate (ASK Institute)	10-3
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
			Retail Trades Assessment (NOCTI)	10-36
Hospitality, Tourism, and Recreation Marketing				
Hotel/Motel Marketing 8160/8161	5-9	5-10	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Lodging Management Program Certification, Level 1 (AH&LA)	10-27
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
			START Certification (AH&LA)	10-36
Advanced Hotel/Motel Marketing 8162/8163	5-9	5-10	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Advanced Concepts of Business and Marketing Certificate (ASK Institute)	10-3
			Lodging Management Program Certification, Level 2 (AH&LA)	10-27
			Hospitality Management—Food & Beverage Assessment (NOCTI)	10-23
			Hospitality Management—Lodging Option Assessment (NOCTI)	10-23
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
			START Certification (AH&LA)	10-36
Sports, Entertainment, and Recreation Marketing				
Sports, Entertainment, and Recreation Marketing 8175/8176	5-10	5-11	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Advanced Sports, Entertainment, and Recreation Marketing 8177/8178	5-10	5-11	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Advanced Concepts of Business and Marketing Certificate (ASK Institute)	10-3
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Travel and Tourism Marketing				
Travel and Tourism Marketing 8165/8166	5-11	5-12	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Advanced Travel and Tourism Marketing 8167/8168	5-11	5-12	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Advanced Concepts of Business and Marketing Certificate (ASK Institute)	10-3
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Financial Services Marketing				
Financial Services Marketing 8180/8181	5-12	5-12	Fundamental Concepts of Business and Marketing Certificate (ASK Institute)	10-20
			Advanced Concepts of Business and Marketing Certificate (ASK Institute)	10-3
			National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Real Estate Marketing				
Real Estate Marketing 8191	5-13	5-13	Real Estate Salesperson (Virginia Real Estate Board)	10-35
Special Program				
Marketing Dual Enrollment with Postsecondary 8198	5-13			

Technology Education

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Middle School Courses				
Careers and You	12-5			
Introduction to Technology 8483/8482/8484/8581	12-5			
Inventions and Innovations 8461/8464/8485	12-5			
Technological Systems 8462/8463/8486	12-6			
Design and Technology				
Technology Foundations 8403/8402	6-3	6-4		
Technology Transfer 8405/8404	6-3	6-4		
Technology Assessment 8407/8406	6-3	6-4		
Engineering, Option 1				
Introduction to Engineering 8490	6-4	6-4	Pre-Engineering/Engineering Technology Assessment (NOCTI)	10-34
Advanced Engineering 8491	6-4	6-4		
Engineering, Option 2				
Principles of Engineering 8441	6-5	6-5	Pre-Engineering/Engineering Technology Assessment (NOCTI)	10-34
Introduction to Engineering Design 8439	6-5	6-5		
Digital Electronics 8440	6-5	6-5	Pre-Engineering/Engineering Technology Assessment (NOCTI)	10-34
Computer Integrated Manufacturing 8442	6-5	6-5		
Engineering Design and Development 8443	6-5	6-5		
Communication and Information Technology				
Computer Control and Automation 8420	6-6	6-6		
Computer Control and Automation 8421	6-6	6-6	IT Essentials Certificate Level 1 (Cisco Systems)	10-26
Communication Systems 8415/8418	6-6	6-6		
Graphic Communication Systems 8458/8494	6-7	6-7		
Geospatial Technology 8423	6-7	6-7		
Imaging Technology 8455	6-7	6-8		
Video and Media Technology 8497	6-8	6-8		
Control Technology				
Electronic Systems I 8416/8417	6-8	6-9	A+ (CompTIA)	10-1
			A+ Operating Systems Technologies Examination (CompTIA)	10-1
			A+ Core Hardware Examination (CompTIA)	10-2
			Certified Electronics Technician Associate (ETA)	10-9
			Electronic Technology Assessment (NOCTI)	10-18
			Student Electronics Technician Certification (SET) (ETA)	10-37

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Electronic Systems II 8412	6-9	6-9	A+ (CompTIA)	10-1
			A+ Operating Systems Technologies Examination (CompTIA)	10-1
			A+ Core Hardware Examination (CompTIA)	10-2
			Certified Electronics Technician Associate (ETA)	10-9
			Electronic Technology Assessment (NOCTI)	10-18
			Student Electronics Technician Certification (SET) (ETA)	10-37
Electronics Systems III 8413	6-9	6-9	A+ (CompTIA)	10-1
			A+ Operating Systems Technologies Examination (CompTIA)	10-1
			A+ Core Hardware Examination (CompTIA)	10-2
			Certified Electronics Technician Associate (ETA)	10-9
			Electronic Technology Assessment (NOCTI)	10-18
			Student Electronics Technician Certification (SET) (ETA)	10-37
Power and Transportation 8445/8444	6-9	6-9		
Energy and Power 8448	6-9	6-9		
Production Technology				
Construction Technology 8431/8432	6-10	6-10		
Materials and Processes Technology 8433/8478	6-10	6-10		
Production Systems 8447/8446	6-10	6-10		
Manufacturing Systems 8425/8426	6-11	6-11	Manufacturing Technology Assessment (NOCTI)	10-28
Advanced Manufacturing Systems 8427	6-11	6-11	Manufacturing Technology Assessment (NOCTI)	10-28
Information Technology in Production Systems 8496	6-11	6-12	A+ Certification (CompTIA)	10-1
			A+ Operating Systems Technologies Examination (CompTIA)	10-1
			A+ Core Hardware Examination (CompTIA)	10-2
			IT Essentials Certificate Level 1 (Cisco Systems)	10-26
Technical Design and Illustration				
Technical Drawing and Design 8435/8434	6-12	6-13	AutoCAD Certifications (Brainbench)	10-4
Engineering Drawing and Design 8436/8493	6-12	6-13	AutoCAD Certifications (Brainbench)	10-4
Architectural Drawing and Design 8437/8492	6-12	6-13	AutoCAD Certifications (Brainbench)	10-4
Digital Visualization	6-13	6-13	AutoCAD Certifications (Brainbench)	10-4
Principles of Technology				
Principles of Technology I 9811	6-13	6-14		
Principles of Technology II 9812	6-13	6-14		
Biotechnology Program				
Biotechnology Foundations 8468	6-14	6-14		
Bioengineering 8467B	6-14	6-14		
Other Courses				
Technology Awareness 8410 (Grades K-5)	6-14			
Technology Education Dual Enrollment with Postsecondary 8498	6-14			
Technology Studies 8465	6-14			
Advanced Technology Studies 8466	6-14			

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Career and Technical Occupational Exploration—Disadvantaged 8469	6-14			
CTE Occupational Exploration Disabled—8471	6-14			
Industrial Occupational Exploration 8427	6-14			

Trade and Industrial Education

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Communications and Graphics				
Advertising Design 8570/8571/8572	7-2	7-2	Advertising Design Assessment (NOCTI)	10-3
Basic Photography 8610	7-2	7-3		
Commercial Photography 8607/8608/8609	7-3	7-3		
Computer Networking Hardware Operations I 8542	7-3	7-4	Cisco CCNA Academy Certificate Level 1	10-11
Computer Networking Hardware Operations II 8543	7-3	7-4	Cisco CCNA Academy Certificate Level 2	10-12
Computer Networking Hardware Operations III 8544	7-3	7-4	Cisco CCNA Academy Certificate Level 3	10-12
Computer Networking Hardware Operations IV 8545	7-3	7-4	Cisco CCNA Academy Certificate Level 4	10-12
			Cisco Certified Networking Associate (CCNA)	10-12
			IT Essentials Level 2 (Networking Operating Systems) (Cisco Systems)	10-26
Computer Repair and Servicing 8621 (Computer Maintenance)	7-4	7-4		
Computer Systems Technology 8622/8623/8624	7-4	7-5	A+ (CompTIA)	10-1
			A+ Certification Operating Systems Technologies Examination (CompTIA)	10-1
			A+ Certification Core Hardware Examination (CompTIA)	10-2
			Brainbench Systems Administration Certification	10-6
			Brainbench Technical Support Certification	10-6
			Certified Computer Service Technician (ETA)	10-9
			Fundamentals of Wireless LANs Certification (Cisco Systems)	10-21
			IT Essentials 1 Certificate (Cisco Systems)	10-26
Drafting 8530/8531/8532	7-5	7-5	Architectural Drafting Assessment (NOCTI)	10-4
			AutoCAD Certifications (Brainbench)	10-4
			CAD Assessment (NOCTI)	10-7
			Drafter Certification (American Design Drafting Association)	10-17
			General Drafting and Design Assessment (NOCTI)	10-21
Electronics Technology 8536/8537/8538	7-6	7-6	Certified Computer Service Technician (ETA)	10-9
			Certified Electronics Technician Associate (ETA)	10-9
			Certified Satellite Dish Installer (ETA)	10-11
			Electronics Technology Assessment (NOCTI)	10-18
			Student Electronics Technician Certification (SET) (ETA)	10-37
			Telecommunications Electronics Technician (ETA)	10-37
Graphic Imaging Technology 8660/8661/8662	7-6	7-7	Adobe Certified Expert (Adobe Systems Incorporated)	10-3
			Brainbench Desktop Publishing Software Certifications	10-7
			Graphic Communications Technology Assessment (NOCTI)	10-21
			PrintED Certification (all exams) (Graphic Arts Education and Research Foundation)	10-35

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Radio Communications 8640/8641/8642	7-7	7-7		
Robotic Workcell Technology 8557/8558/8559	7-7	7-8		
Telecommunications 8650/8651	7-8	7-8	Telecommunications Electronics Technician Certification (ETA)	10-37
Television Production 8688/8689/8690	7-8	7-8	Audio-Visual Communications Assessment (NOCTI)	10-4
			Television Broadcasting Assessment (NOCTI)	10-37
			Visual Communications Assessment (NOCTI)	10-37
Construction				
Basic Carpentry 8600	7-9	7-9		
Brick Layer 8549	7-9	7-9		
Building Trades 8515/8516/8517	7-9	7-10	Core, Introductory Craft Skills, National Construction Career Test (NCCER)	10-15
			Basic Principles of Construction: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-5
			Carpentry Level One, National Construction Career Test (NCCER)	10-8
			Carpentry, National Construction Career Test (NCCER)	10-8
			Carpentry: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-8
			Electrical, National Construction Career Test (NCCER)	10-18
			Electrical Principles of Construction: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-17
			House Wiring Principles: Construction Academy Examination (Thomson Delmar/Home Builders Institute)	10-24
			Masonry, National Construction Career Test (NCCER)	10-28
			Plumbing Assessment (NOCTI)	10-34
			Plumbing: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-34
Cabinetmaking 8604/8605/8606	7-10	7-11	Core, Introductory Craft Skills, National Construction Career Test (NCCER)	10-15
			Basic Principles of Construction: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-5
			Cabinetmaking Assessment (NOCTI)	10-7

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Carpentry 8601/8602/8603	7-11	7-11	Core, Introductory Craft Skills, National Construction Career Test (NCCER)	10-15
			Basic Principles of Construction: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-5
			Carpentry Level One, National Construction Career Test (NCCER)	10-8
			Carpentry: Residential Construction Academy Examination (Thomson Delmas/Home Builders Institute)	10-8
			Carpentry, National Construction Career Test (NCCER)	10-8
			Carpentry Assessment (NOCTI)	10-8
Building Management 8590/8591/8592	7-12	7-12		
Electricity 8533/8534/8535	7-12	7-13	Core, Introductory Craft Skills, National Construction Career Test (NCCER)	10-15
			Basic Principles of Construction: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-5
			BICSI Registered Installer, Level 1 (BISCI/International Telecommunications Association)	10-5
			Certified Fiber Optics Installer (Association of Communications and Electronics Schools, International)	10-9
			Certified Satellite Disk Installer (ETA)	10-11
			Construction Electricity Assessment (NOCTI)	10-14
			Copper-Based Cabling Certification (RBT Systems)	10-15
			Data Cabling Installer Certification (ETA)	10-16
			Electrical Construction Assessment (NOCTI)	10-17
			Electrical Principles: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-17
			Electricity, National Construction Career Test (NCCER)	10-18
			Fiber Optic Network Cabling Certification (RBT Systems)	10-19
			Fiber Optics Installer (ETA)	10-19
			Graymark Cable Installation Certification (Graymark International)	10-21
			House Wiring: Residential Construction Academy Examination (Thomson Delmar Learning/Home/Builders Institute)	10-24
			Voice and Data Cabling Certification (Cisco Systems)	10-38

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Heating, Ventilation, Air Conditioning, and Refrigeration 8503/8504/8505	7-14	7-14	Air Conditioning Certification (HVAC Excellence)	10-3
			Basic Principles of Construction: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-5
			Commercial Air Conditioning Certification (HVAC Excellence)	10-14
			Commercial Refrigeration Certification (HVAC Excellence)	10-14
			Core, Introductory Craft Skills, National Construction Career Test (NCCER)	10-15
			Electrical Certification (HVAC Excellence)	10-18
			Electric Heat Certification (HVAC Excellence)	10-18
			EPA Technician Certification (Core Exam I, II, or III) (Environmental Protection Agency)	10-19
			Gas Heat Certification (HVAC Excellence)	10-21
			Heating, Electrical, Air Conditioning Technology (HEAT) Examination (HVAC Excellence)	10-22
			Heat Pump Certification (HVAC Excellence)	10-22
			HVAC, National Construction Career Test (NCCER)	10-24
			HVAC: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-24
			Installer Core Certification (NATE)	10-25
			Light Commercial Heating & Air Conditioning (ARI)	10-26
			Oil Heat Certification (HVAC Excellence)	10-33
Masonry 8512/8513/8514	7-15	7-15	Residential Air-Conditioning and Heating Certification (ARI)	10-36
			Core, Introductory Craft Skills, National Construction Career Test (NCCER)	10-15
			Basic Principles of Construction: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-5
			Construction Masonry – Blocklaying Assessment (NOCTI)	10-14
			Construction Masonry – Bricklaying Assessment (NOCTI)	10-15
Plumbing 8551/8552/8553	7-15	7-16	Masonry, National Construction Career Test (NCCER)	10-28
			Core, Introductory Craft Skills, National Construction Career Test (NCCER)	10-15
			Basic Principles of Construction: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-5
			Plumbing: Residential Construction Academy Examination (Thomson Delmar Learning/Home Builders Institute)	10-34
Utility/Heavy Construction Technology 8616/8617/8618	7-16	7-16	Plumbing Assessment (NOCTI)	10-34

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Metals				
Industrial Maintenance Technology 8575/8576/8577	7-17	7-17	EPA Technician Certification (Core Exam I, II, or III) (Environmental Protection Agency)	10-19
			Industrial Maintenance Mechanic Assessment (NOCTI)	10-25
Precision Machining Technology 8539/8540/8541	7-17	7-18	Machining Skills Level 1—Drill Press (NIMS)	10-27
			Machining Skills Level I—Milling Machine (NIMS)	10-27
			Machining Skills Level 1—Measurements, Materials, and Safety (NIMS)	10-27
			Precision Machining (NOCTI)	10-34
Sheet Metal 8663/8664/8665	7-18	7-18	Metalworking and Fabrication Assessment (NOCTI)	10-29
Welding 8672/8673/8674	7-18	7-19	Core, Introductory Craft Skills, National Construction Career Test (NCCER)	10-15
			SENSE (American Welding Society)	10-36
			Welding, National Construction Career Test (NCCER)	10-34
			Welding (NOCTI)	10-34
Personal Services				
Barbering 8740/8741/8742	7-19	7-19	Barbers (Virginia Board of Barbers and Cosmetology)	10-5
Beauty Salon Assistant 8610	7-19	7-19		
Commercial Sewing 8524/8525/8526	7-20	7-20		
Cosmetology 8527/8528/8529	7-20	7-20	Cosmetology (Virginia Board of Barbers and Cosmetology)	10-15
			Cosmetology (NOCTI)	10-15
Nail Technician 8692/8693	7-21	7-21	Nail Technician (Virginia Board of Barbers and Cosmetology)	10-31
Protective Services				
Criminal Justice 8702/8703/8704	7-21	7-21	Criminal Justice Assessment (NOCTI)	10-16
Firefighting 8705/8706/8707	7-22	7-22	Firefighter I Level 1 Certification (Virginia Department of Fire Programs)	10-19
Public Safety 8700/8701	7-22	7-22		
Transportation				
Aircraft Pilot Training 8731/8732	7-23	7-23		
Aviation Maintenance Technology 8728/8729	7-23	7-23		
Automotive Body Technology—Certified 8676/8677/8678	7-23	7-24	Collision Repair (NOCTI)	10-13
			Collision Repair/Refinishing Technology (NOCTI)	10-13
			Collision Repair & Refinish Test Series (any exam) (NATEF)	10-13
			Refinishing Technology Assessment (NOCTI)	10-35
Automotive Body Repair—Non-Certified 8679/8680/8681	7-24	7-24	Collision Repair (NOCTI)	10-13
			Collision Repair/Refinishing Technology (NOCTI)	10-13
			Collision Repair & Refinish Test Series (any exam) (NATEF)	10-13
			Refinishing Technology Assessment (NOCTI)	10-35
Basic Automotive Body Repair 8675	7-24	7-24		

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Automotive Technology—Certified 8505/8506/8507	7-25	7-25	Automotive Technician (ASE)	10-5
			Automotive Youth Education Systems Exit Examinations (AYES)	10-5
			National Automotive Technicians Education Foundation End of Program Test Series Examinations (NATEF)	10-31
			Parts Specialist: Automobile or Medium/Heavy Truck (NATEF)	10-33
Automotive Servicing—Non-Certified 8710/8711/8712	7-25	7-26	Automotive Technician (ASE)	10-5
			Automotive Youth Education Systems Exit Examinations (AYES)	10-5
			National Automotive Technicians Education Foundation End of Program Test Series Examinations (NATEF)	10-31
			Parts Specialist: Automobile or Medium/Heavy Truck (NATEF)	10-33
Automotive Maintenance 8709	7-26	7-26		
Diesel Equipment Technology 8613/8614/8615	7-26	7-26	Diesel Engine Mechanics Assessment (NOCTI)	10-16
Motorsports Technology 8509/8510/8511	7-27	7-27		
Small Engine Technology 8725/8726/8727	7-27	7-27	Air Cooled Gas Engine Repair (NOCTI)	10-4
			Outdoor Power Equipment Certification (EETC)	10-33
Small Engine Repair 8724	7-27	7-28		
Cooperative Education				
Industrial Cooperative Training 8901/8902/8903/8904	7-28	7-28		
Special Programs				
Trade and Industrial Education Dual Enrollment with Postsecondary 8801	7-28			

Career Connections

Course	Course Description Page #	Course Sequences Page #	Certification, License, Assessment Available	Credential Description Page #
Education for Employment				
EFE Introduction 9075/9076/9082/9083	8-1			
EFE Level 1 9077/9078/9084/9085	8-2	8-2		
EFE Level 2 9079/9080/9086/9087	8-2	8-2		
EFE Cooperative Education 9020/9021/9030/9031	8-2	8-2	National Professional Certification in Customer Service (National Retail Federation Foundation)	10-32
Career Exploration and Investigation				
Careers and You 8475	8-3	8-3		
Career Pathways Phase 1: Career Exploration 9070	8-3	8-3		
Career Pathways Phase 2: Career Skills 9071	8-3	8-3		
Career Pathways Phase 3: Career Match 9072	8-3	8-3		
Entrepreneurship				
Exploring Entrepreneurship 9093	8-4	8-4		
Entrepreneurship Education 9094	8-4	8-4		
Leadership				
Introduction to Leadership 9091	8-4	8-4		
Leadership Development 9092	8-4	8-4		
Teacher Cadet				
ProTeam 9060/9061	8-5	8-5		
Teacher Cadet 9062	8-5	8-5		